

# GPG/HIT Catalyst: Request for Information

U.S. General Services Administration | Public Buildings Service | Green Proving Ground Program  
U.S. Department of Energy | Office of Energy Efficiency & Renewable Energy | High Impact Technology Catalyst



Energy Efficiency &  
Renewable Energy

# AGENDA

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- Overview
- What is the GPG program?
- What is the HIT Catalyst?
- What is the RFI looking for?
- What does it mean to participate?
- How to complete the RFI
- Q&A

# TODAY'S PRESENTERS

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**Christine Wu**

Program Manager, GSA  
Green Proving Ground



**Kevin Powell**

Program Director, GSA  
Green Proving Ground



**Amy Jiron**

Program Manager, DOE  
HIT Catalyst

# GPG/HIT CATALYST: Request for Information

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**Innovative pre- & early-commercial building technologies that improve environmental performance.**

Technologies will be considered for GSA's Green Proving Ground (GPG) program, DOE's High Impact Technology (HIT) Catalyst program, or both.

Technology categories:

- Energy management and energy management information systems
- Window attachments
- Fans and blowers
- Renewable energy
- Water conservation and reuse

Selected technologies will undergo objective measurement & verification in real-world, operating buildings.

# WHY A JOINT RELEASE?

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## Leverage GSA and DOE resources to:

- develop objective information about performance of underutilized technologies
- accelerate adoption of building technologies that cost-effectively reduce national energy consumption
- benefit manufacturers—one submission, two programs, larger portfolio

## Policy Alignment:

- DOE-GSA Interagency Memorandum of Understanding (2015)
- EISA 2007 Section 421(e)

# GSA'S GREEN PROVING GROUND PROGRAM

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# GSA: “THE GOVERNMENT’S LANDLORD”

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- 8,721 assets
  - Owned: 1,574 assets
- 377M square feet
  - Owned: 183M ft<sup>2</sup>
- \$380M annual energy costs
- 1.1 million federal employees

At 52.4 kBTU/sf/yr, GSA buildings are 44% more efficient than typical U.S. commercial buildings.

# FEDERAL MANDATES SET THE PACE

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## Energy Independence and Security Act, 2007

30% reduction in energy use intensity (EUI) by 2015,  
over 2003 levels

### **GSA Response:**

-32.0% EUI reduction as of July 2015

## Executive Order 13693, 2015

25% reduction in EUI through 2025 (2.5% annual),  
over 2015 levels

Efficiency results  
from innovation  
and policy



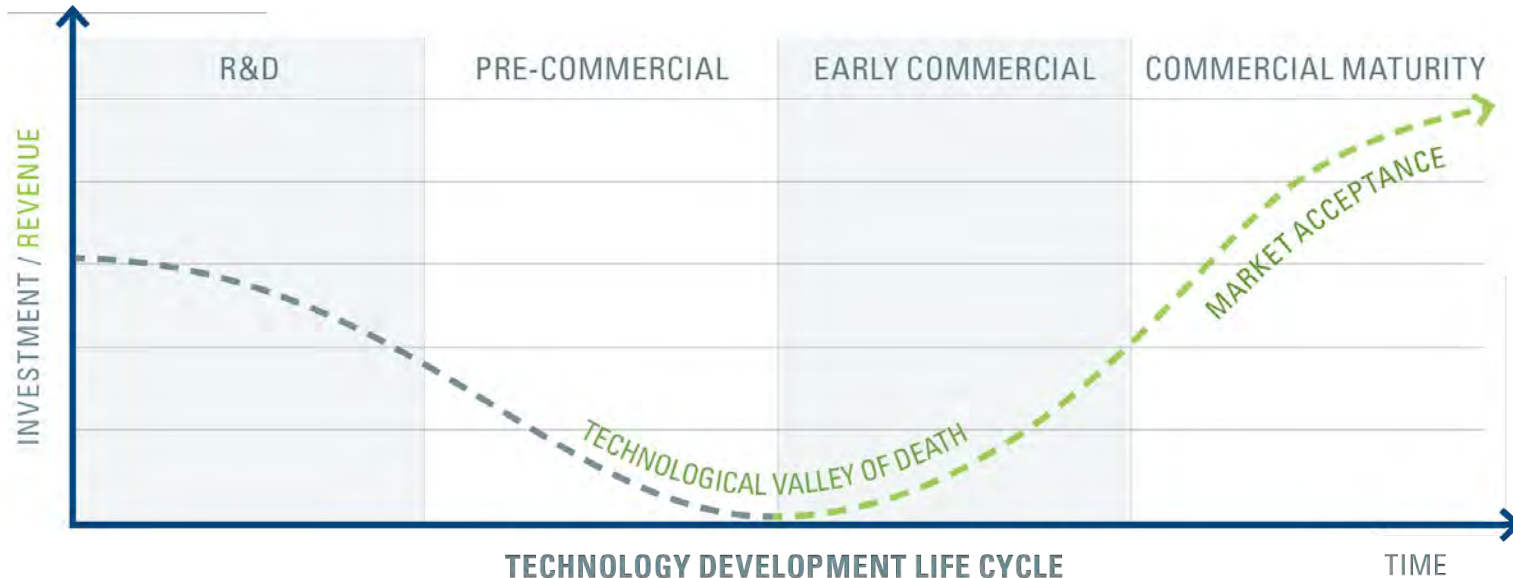
The image shows a multi-story building interior with a glass ceiling. Large, curved, white architectural elements are suspended from the ceiling. The text is overlaid on a dark blue horizontal band in the center of the image.

Innovative building technologies are critical for GSA to meet its sustainability goals.

# INNOVATION REQUIRES SUPPORT

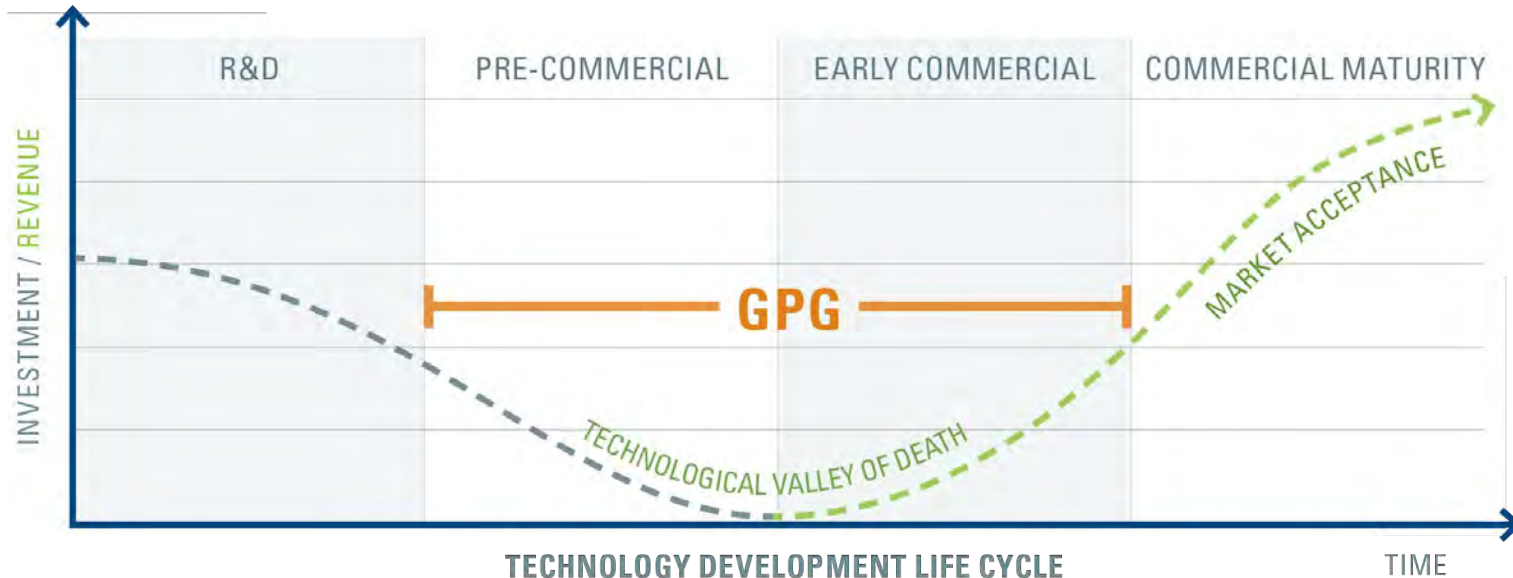
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4 out of 5 technologies fail to cross the Technological Valley of Death and achieve market acceptance because of the financial and operational risks they pose to early adopters.



# GPG SUPPORTS DEVELOPMENT OF INNOVATIVE TECHS

GPG assumes first-use risk and accelerates market acceptance by objectively assessing innovative sustainable building technologies in real-world environments.



# GREEN PROVING GROUND, 2011-2015

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Received	560	technology applications
Selected	48	technologies for M&V
Published	24	DOE laboratory assessments
Identified	14*	broad deployment potential

\* Within GSA portfolio.

## Google Ranking

GPG Technology

Findings consistently  
appear within the top 5

Google search results



# DOE'S HIGH IMPACT TECHNOLOGY CATALYST

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U.S. DEPARTMENT OF  
**ENERGY**

Energy Efficiency &  
Renewable Energy

# HIT CATALYST: Overview

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- Program goals

- Identify and prioritize underutilized, energy-efficient technologies
- Conduct market-facing deployment activities

- Scope: All commercial buildings in the U.S.

- HITs deployed via the Better Buildings Alliance (BBA), federal leaders, regional non-profits and efficiency organizations
- HIT Catalyst facilitates matchmaking with commercial and federal partners

- Strategy

- 4-Step Solution, the HIT Catalyst Playbook
- Handoff to further downstream partners including codes/standards, REEOs, and utility programs

# HIT CATALYST: 4-Step Playbook

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Owners demonstrate interest in high impact technologies but...	A 4-step solution – The HIT Catalyst Playbook
...the cost is too high →	<b>1. INNOVATION CHALLENGE</b> to increase competition
...they are uncertain about real world performance →	<b>2. TECHNOLOGY DEMO</b> to validate performance
...there are too many barriers →	<b>3. RESOURCE DEVELOPMENT</b> to support adoption
...they are waiting until the broader market adopts →	<b>4. ADOPTION CAMPAIGN</b> to lock in savings



# HIT CATALYST PLAYBOOK: 1. Innovation Challenge

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**2010:** DOE and commercial building owners issued a challenge for more efficient rooftop HVAC units (RTUs)



**RESULT:** 25% increase in high-efficiency RTU models on the market from 2010 to 2014.

First manufacturers to meet the challenge:



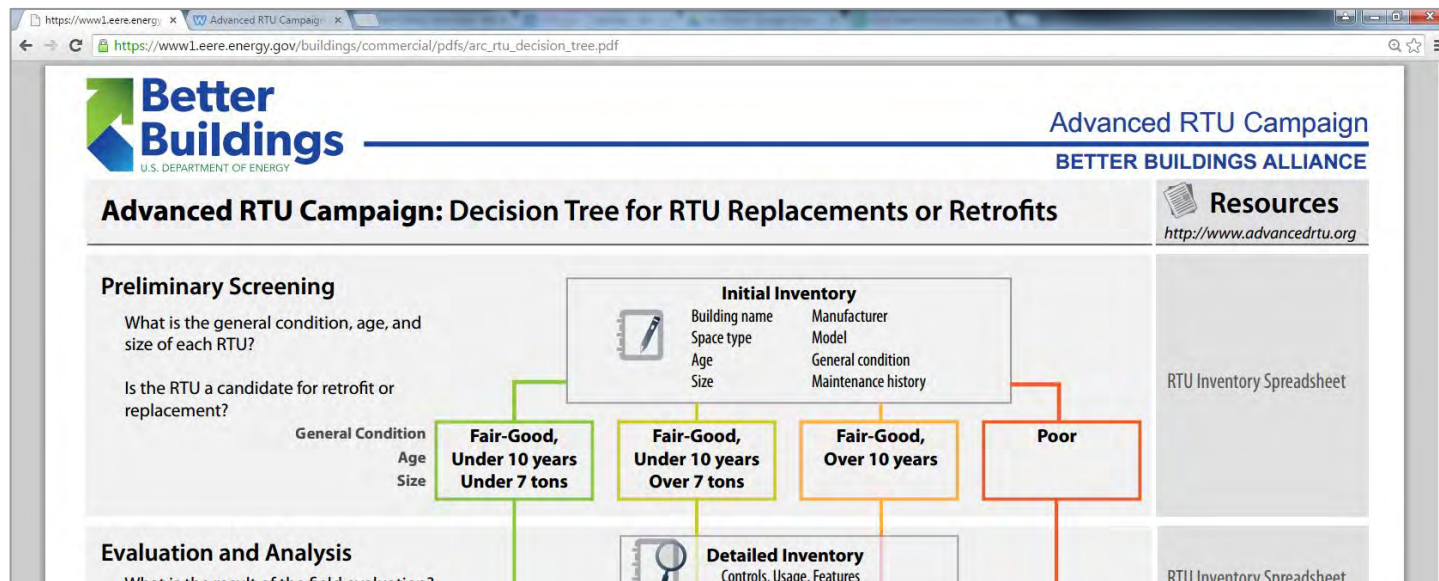
**DAIKIN McQUAY®**





# HIT CATALYST PLAYBOOK: 3. Resource Development

**2014-2015:** HIT supported the development of 5 case studies and guidance documents to disseminate information and resources to enable adoption by partners.



<http://www.advancedrtu.org/>

# HIT CATALYST PLAYBOOK: 4. Adoption Campaign

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- **2014:** Phase 1, Joint DOE/Industry recognition campaign & guidance
  - 200 partners with 43,000 RTUs retrofitted or replaced
  - Savings – 386 million kWh, 4 TBTU/year source, and 356 million pounds of CO<sub>2</sub>
- **Current:** Phase 2
  - 10 award categories for RTU projects
  - Announcements and recognition at the Better Buildings Summit



# GPG/HIT CATALYST: Joint Request for Information

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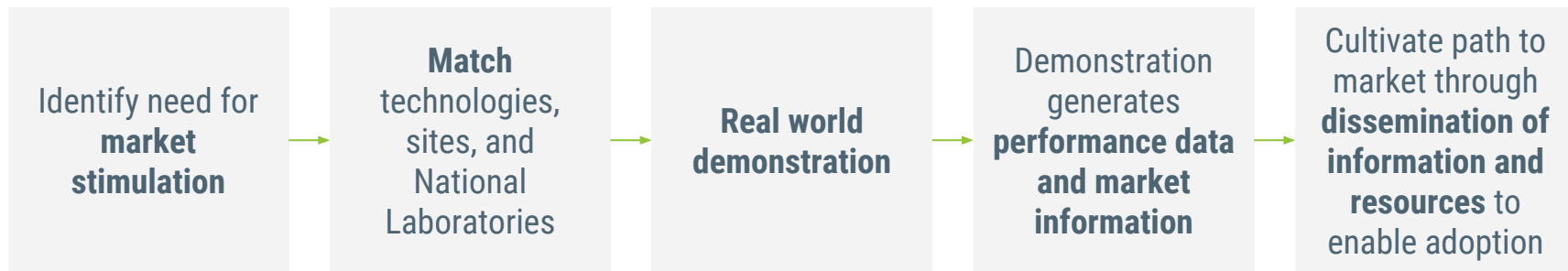


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# FEDERAL PROGRAMS: What is the goal?

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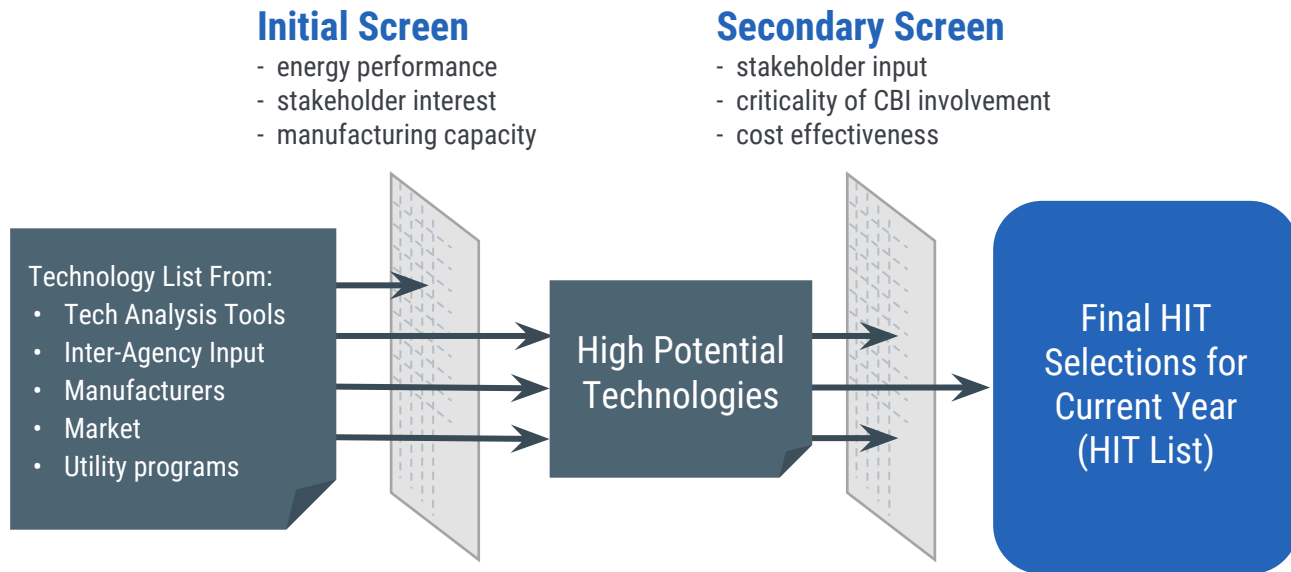
Accelerate adoption of sustainable technologies and advance the market



# Prioritizing Technology Selection

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HITs selected from over 400 measures through a multi-step, collaborative screening process driven by expert input.



# RFI: What Are We Looking For?

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## Technology Categories:

- Energy management and energy management information systems
- Window attachments
- Fans and blowers
- Renewable energy
- Water conservation and reuse

## Technology Maturity:

- Pre- and early commercial but market-ready
- Emerging and underutilized





## Factors considered in the RFI:

1. Innovation
2. Performance
3. Deployment Potential
4. Costs/Savings
5. Project Value
6. Technical Risk



# RFI: Potential Host Sites

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## HIT Catalyst:

- All commercial buildings in the U.S., including privately-owned buildings, federal buildings outside of GSA's jurisdiction, and institutional buildings

## Green Proving Ground:

- Federally-owned buildings in GSA's portfolio
- Large urban buildings with central plant
  - 90% buildings > 100,000 ft<sup>2</sup>, 80% portfolio energy spend: buildings > 200,000 ft<sup>2</sup>
- Majority in mild climate zone
  - > 80% in ASHRAE climate zones 3, 4, 5
- Energy efficient: Majority Energy Star 80 or better



## Successful technologies:

1. Reduce energy or water use
2. Decrease reliance on non-renewable energies
3. Decrease operational costs
4. Improve tenant satisfaction
5. Have the potential to transform markets through broad deployment

# PROGRAM PARTICIPATION: Potential Benefits

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- Increase market acceptance
- Accelerate deployment & development of sustainable building technologies
- Contribute to reduction of national energy consumption
- Follow-on actions for technologies with broad deployment potential may include:
  - Engagement of GSA property managers and commercial portfolio managers
  - Support for participation in GSA Schedules
  - Engagement with ESCOs
  - Incorporation of evaluation findings into performance specifications
  - Streamlined entry for utility incentives and rebate programs

# PROGRAM PARTICIPATION: Your Contribution

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## Technology

- GPG—Technology must be gifted to the U.S. government
- HIT—Demonstration project details will be negotiated between vendor and host site partner

## Time and Travel

- Provide input to labs on site selection, test bed design, project plan, and evaluation report
- Provide guidance on installation, commissioning, and tenant engagement
- Travel to 1 - 3 on-site meetings

**Neither GSA nor DOE will provide funding to participants in either program**

# ROLES AND RESPONSIBILITIES

Federal Program	Host Site	National Lab	Tech Vendor
<ul style="list-style-type: none"><li>Overall project management</li><li>Support site selection</li><li>Coordinate and fund M&amp;V</li><li>Lead report review and publication</li><li><i>GPG only: Fund tech installation</i></li></ul>	<ul style="list-style-type: none"><li>Oversee all contracting</li><li>Manage technology installation</li><li>Facilitate tenant engagement</li><li>Provide user feedback</li></ul>	<ul style="list-style-type: none"><li>Design project plan</li><li>Collect and analyze data</li><li>Author technical report</li></ul>	<ul style="list-style-type: none"><li>Provide technology</li><li>Support design, installation and commissioning</li></ul>

# RFI: How to Apply



The screenshot shows the 'HIGH IMPACT TECHNOLOGY CATALYST' website. The header includes the ENERGY.GOV logo and navigation links for SERVICES, EFFICIENCY, RENEWABLES, TRANSPORTATION, ABOUT US, and OFFICES. The main content area is titled 'HIGH IMPACT TECHNOLOGY CATALYST' and features three numbered steps: 1. Identify High Impact Technologies, 2. Define the game plan for promoting identified High Impact Technologies, and 3. Stimulate the market to adopt proven High Impact Technologies. Each step includes a diagram and a brief description. A sidebar on the left lists various resources like 'Identify Potential HIT's', 'Define the Game Plan', and 'Stimulate the Market'. A paragraph below the steps explains the program's goals and the role of the Technology as Market Initiative (TMI).

**1 Identify High Impact Technologies**

**2 Define the game plan for promoting identified High Impact Technologies**

**3 Stimulate the market to adopt proven High Impact Technologies**

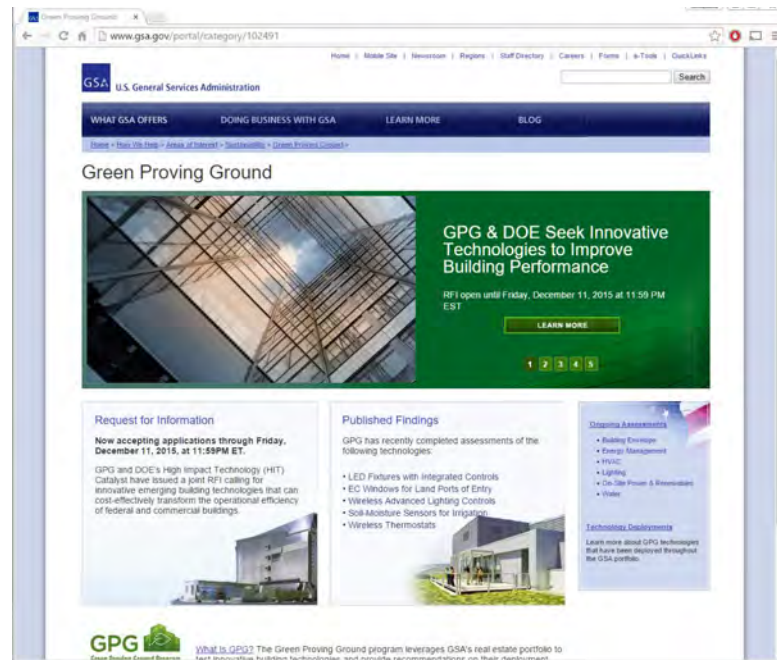
High impact technologies (HITs) are cost-effective, underutilized energy-efficient commercial building technologies. Through the High Impact Technology Catalyst program, initiated in 2014, the U.S. Department of Energy (DOE) identifies and guides HITs through their early market introduction phases, ultimately leading them to the broader market through partnerships with the commercial building industry via the Better Buildings Alliance, federal leaders, regional non-profits, utilities and efficiency organizations. HIT Catalyst also serves as the umbrella program under which all of the Commercial Buildings Integration program's technology specific deployment activities will fall, along with the Technology as Market Initiative, which plays an important role in many HIT Catalyst market transformation activities.

**CURRENT HITS**

The current HIT List was developed through an evaluation of over 400 building technologies. DOE will initiate market transformation activities for these technologies starting in 2015.

- LED Troffers with Controls
- Packages of Building Management and Information Systems (including submetering, control and automated fault detection and diagnostics)

buildings.energy.gov/hitcatalyst



The screenshot shows the 'Green Proving Ground' website. The header includes the GSA logo and navigation links for WHAT GSA OFFERS, DOING BUSINESS WITH GSA, LEARN MORE, and BLOG. The main content area is titled 'Green Proving Ground' and features a large banner for 'GPG & DOE Seek Innovative Technologies to Improve Building Performance'. The banner includes a 'LEARN MORE' button and a note that the RFI is open until Friday, December 11, 2015 at 11:59 PM EST. Below the banner, there are sections for 'Request for Information' and 'Published Findings'. The 'Request for Information' section states that applications are accepted through Friday, December 11, 2015, at 11:59PM ET. The 'Published Findings' section lists several technologies that have been identified, including LED Fixtures with Integrated Controls, EC Windows for Land Ports of Entry, Wireless Advanced Lighting Controls, Soil-Moisture Sensors for Irrigation, and Wireless Thermostats. A sidebar on the right lists 'Strategic Assessments' and 'Technology Deployments'.

**GPG & DOE Seek Innovative Technologies to Improve Building Performance**

RFI open until Friday, December 11, 2015 at 11:59 PM EST

**Request for Information**

Now accepting applications through Friday, December 11, 2015, at 11:59PM ET.

GPG and DOE's High Impact Technology (HIT) Catalyst have issued a joint RFI calling for innovative emerging building technologies that can cost-effectively transform the operational efficiency of federal and commercial buildings.

**Published Findings**

GPG has recently completed assessments of the following technologies:

- LED Fixtures with Integrated Controls
- EC Windows for Land Ports of Entry
- Wireless Advanced Lighting Controls
- Soil-Moisture Sensors for Irrigation
- Wireless Thermostats

**Strategic Assessments**

- Building Envelope
- Energy Management
- HVAC
- Lighting
- On-Site Power & Renewable
- Water

**Technology Deployments**

Learn more about GPG technologies that have been deployed throughout the GSA portfolio.

gsa.gov/gpg

# RFI: How to Apply

The screenshot shows the FedBizOpps.gov website. The main header includes the GSA logo and the title 'Innovative Building Technologies -- Green Proving Ground, HIT Catalyst Programs'. Below the title, there is a synopsis of the solicitation, which is a Request for Information (RFI) for innovative, emerging building technologies. The synopsis mentions that the RFI is for technologies that can cost-effectively transform the operational efficiency and environmental performance of federal and commercial buildings. It also states that responses to this RFI will be evaluated and considered for inclusion in the GSA's Green Proving Ground (GPG) program, the DOE's High Impact Technology (HIT) Catalyst program, or both. The website also features a 'Notice Details' section with links to 'Packaging' and 'Interested Vendors List'.

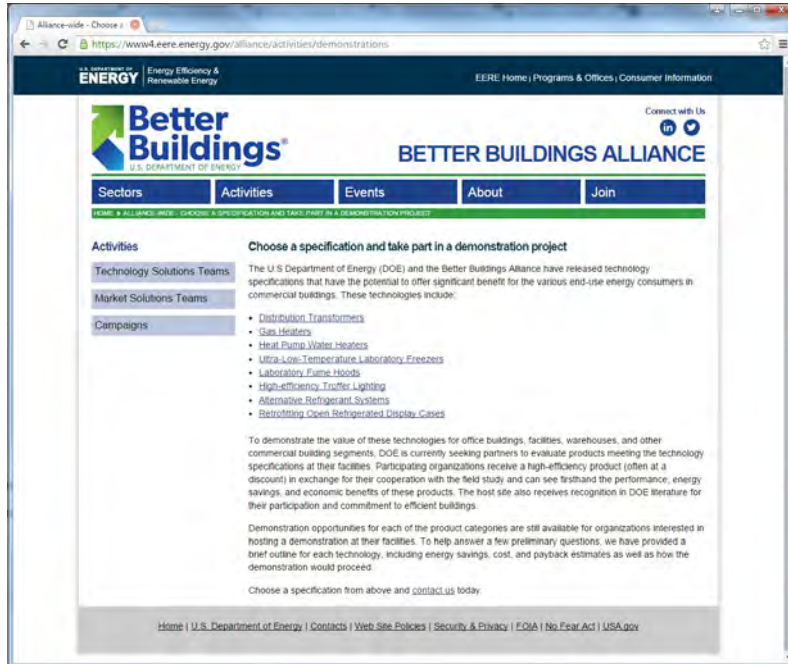
<http://goo.gl/bdE5Fg>

The screenshot shows the survey.clicktools.com website. The main header includes the GSA logo and the title 'Innovative Building Technologies -- Green Proving Ground, HIT Catalyst Programs'. Below the title, there is a survey form with several sections. The first section is 'Introduction', which explains the purpose of the RFI and the evaluation process. The second section is 'Instructions', which provides guidelines for completing the survey. The third section is 'Survey Questions', which contains a list of questions related to the RFI. The survey form also includes a 'Contact-Related Data Fields' section at the bottom, which contains fields for 'First Name', 'Last Name', 'Email', 'Phone', and 'Company Name'.

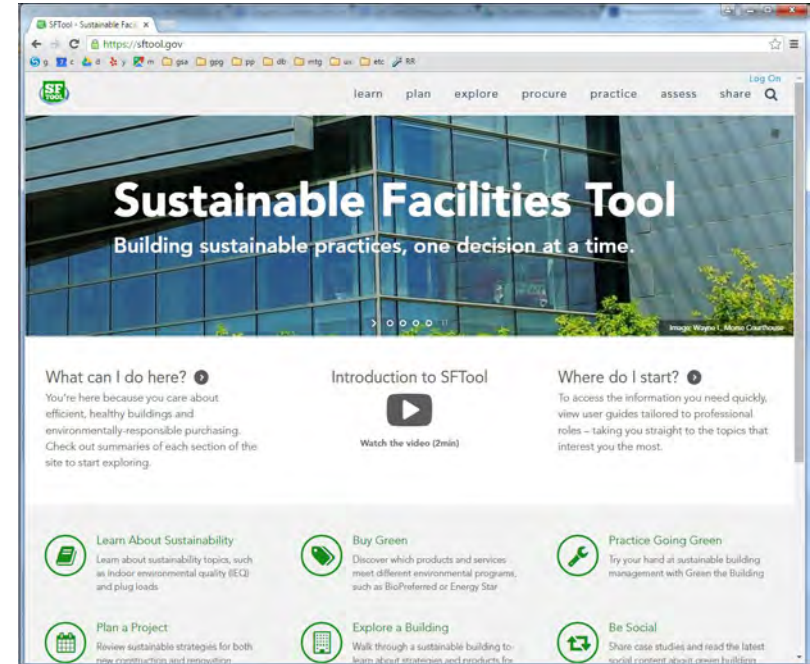
<http://goo.gl/30v82J>



# Additional Resources



<https://www4.eere.energy.gov/alliance/activities/demonstrations>



<http://sftool.gov>



# Questions?

[gpg+2016@gsa.gov](mailto:gpg+2016@gsa.gov)

[gsa.gov/gpg](http://gsa.gov/gpg)

[buildings.energy.gov/hitcatalyst](http://buildings.energy.gov/hitcatalyst)

**Applications due by Friday, December 11, 11:59 PM EST**



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